

Hanyong Xu

email hanyongx@mit.edu
website hanyongxu.com
address 77 Massachusetts Ave.
Cambridge, MA 02139

RESEARCH INTEREST

- Platform economy and human mobility
- Computational methods for urban systems
- Data-informed public policy making

EDUCATION

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|----------------|---|------------------|
| 2023 - present | Ph.D., Urban Science
Massachusetts Institute of Technology
<ul style="list-style-type: none">▪ Advisor: Jinhua Zhao▪ <i>Selected Coursework: Optimization Methods; Transportation Foundation & Methods; Demand Modeling</i> | Cambridge, MA |
| 2019 - 2020 | Master, Urban Spatial Analysis
University of Pennsylvania
<ul style="list-style-type: none">▪ Advisor: Ken Steif▪ <i>Selected Coursework: Spatial Statistics and Data Analysis; Data Wrangling and Visualization</i> | Philadelphia, PA |
| 2015 - 2019 | Honors Bachelor of Arts
University of Toronto
<ul style="list-style-type: none">▪ with High Distinction▪ Double Major in Economics and Architectural Design | Toronto, ON |

JOURNAL PUBLICATIONS

*: Corresponding author.

- [1] **Xu, H.***, & Zhao, J. (2026). Longitudinal evaluations of the coverage and pricing differences between transportation network companies and traditional taxis: A case study of New York city. *Transportation Research Part A: Policy and Practice*, 212, 105150. <https://doi.org/10.1016/j.tra.2026.105150>
- [2] Mo, B., **Xu, H.***, Ma, R., Cho, J.-H., Zhuang, D., Guo, X., & Zhao, J. (2026). Large language models for travel behavior prediction. *Transportation Research Interdisciplinary Perspectives*, 38, 102124. <https://doi.org/10.1016/j.trip.2026.102124>

POLICY BRIEF

- [1] **Xu, H.**, Aloisi, J., Atluri, B. (2026). "The Value of Transit in Seattle and the King County Region." MIT Mobility Initiative. [[report](#)]
Presented at the MIT Mobility Forum. [[video link](#)]

CONFERENCE PROCEEDINGS

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| Jan 2026 | Xu, H. , Zhao, J. "Longitudinal Evaluations of the Coverage and Pricing Differences between Transportation Network Companies and Traditional Taxis: A Case Study of New York City."
<i>105th Transportation Research Board Annual Meeting (TRB, poster presentation)</i> |
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He, X., **Xu, H.**, Shen C., Zhuang D., Zheng Y., & Zhao J. “Modeling Latent Demand and Reducing Prediction Disparities of Ride-hailing: A Fair Quantile Regression Method.” *105th Transportation Research Board Annual Meeting (TRB, lectern presentation)*

July 2025 Gao J., **Xu H.**, Dao L. “Simulating Multi-Stakeholder Decision-Making with Generative Agents in Urban Planning” [\[arxiv\]](#)[\[proceeding\]](#)
32nd International Conference on Transdisciplinary Engineering (TE2025, oral presentation)

Jan./Apr. 2025 Zhuang D., **Xu H.**, Guo X., Zheng Y., Wang S., & Zhao J. “Mitigating Spatial Disparity in Urban Prediction Using Residual-Aware Spatiotemporal Graph Neural Networks: A Chicago Case Study.” [\[arxiv\]](#)[\[proceeding\]](#)
*World Wide Web Conference (WebST Workshop @ WWW’25, **Best Paper Award**), 104th Transportation Research Board Annual Meeting (TRB, poster presentation)*

Oct. 2024 **Xu H.** “Navigating Algorithmic Unfairness in Ride-Hailing: Examining Disparate Impacts of Transportation Network Company Algorithms in New York City.”
2024 INFORMS Annual Meeting (invited talk)

Sept. 2024 Mo B., **Xu H.**, Cho J. H., Zhuang D., Ma R., Guo X., & Zhao J. “Large Language Model for Travel Behavior Prediction.” [\[arxiv\]](#)
Conference in Emerging Technologies in Transportation Systems (TRC-30, poster presentation)

WORKING PAPERS

- [1] He, X., **Xu, H.**, Shen C., Zhuang D., Zheng Y., & Zhao J. “Modeling Latent Demand and Reducing Prediction Disparities of Ride-hailing: A Fair Quantile Regression Method.”
- [2] Guo X., **Xu H.**, Zheng Y., Zhuang D., & Zhao J. “Disparity-Reducing Vehicle Rebalancing in the Ride-hailing System.” [\[arxiv\]](#)

RESEARCH EXPERIENCE

2023 - present	Researcher, JTL Urban Mobility Lab, MIT	Cambridge, MA
2022	Research Assistant, FUSE Lab, Hong Kong University	Remote

PROFESSIONAL EXPERIENCE

2021 - 2023	Data Analyst, Internal Risk Control and Compliance, Meituan	Beijing, China
2020 - 2021	Data and GIS Analyst, CityDNA Technology Co.	Beijing, China
2020	Data Science Intern, AreaProbe	Remote

TEACHING EXPERIENCE

Student Instructor, Introduction to Spatial Analysis and GIS, MIT (2024 Fall, 2025 Spring, 2026 Spring)

Student Instructor, Workshop on GIS, MIT (2024 Fall, 2025 Spring, 2026 Spring)

HONORS & GRANT

2024	Racially Just Research Initiative Microgrant, DUSP MIT
2024	Design and Technology Fellow, FASPE
2023	Presidential Graduate Fellowship, MIT
2020	Descartes Award (top 2 in the cohort), University of Pennsylvania

- 2019 **1st Place**, Wharton Customer Analytics + Electronic Arts Datathon
2019 **2nd Prize**, Computational Design and Robotic Fabrication International Competition, DigitalFUTURES, Tongji University
2019 **UofT Women in House**, University of Toronto

INSTITUTE SERVICE

- 2024 - 2025 **Student Representative**, MIT DUSP PhD Committee

SKILLS

Descriptive & Predictive Analysis:

- Data Science: Python (pandas, geopandas, numpy, matplotlib), SQL, R, Excel;
- Machine Learning/Deep Learning: Sklearn, Tensorflow, and PyTorch;
- Demand Modeling: Discrete Choice Model (biogeme);
- Transportation Foundations: Traffic Flow, Queueing Systems.

Inference & Prescriptive Analysis:

- Causal Inference with econometrics;
- Optimization with Julia + Gurobi;
- Dynamic Programming and Markov Decision Process.

Geo-Spatial Analysis: ArcGIS, ArcPy, QGIS, Google Earth Engine, GeoDa, Spatial Statistics.

Front End & Visualization: JavaScript + html + css, Vue, Leaflet, Mapbox, Kepler.

Languages: English, Chinese (Mandarin).

Last updated: Jul. 12th, 2026